CURRENT LISTING OF CLAIMS:

1. (Previously presented) A structure comprising:

a first array of a plurality of cellular housing structures bonded together; and

a plurality of cellular core structures each disposed within a cellular housing structure.

2. (Previously presented) The structure of claim 1, further comprising:

a second array of a plurality of cellular housing structures bonded together; and

a plurality of cellular core structures each disposed within a cellular housing structure of said second array, wherein said first array is bonded to said second array.

3. (Previously presented) The structure of claim 1 or 2, further comprising:

a first panel disposed on one of said arrays of cellular housing structures.

4. (Previously presented) The structure of claim 3, further comprising:

a second panel disposed on one of said arrays of cellular housing structures distal from said first panel.

5. (Previously presented) The structure of claim 4, wherein at least a plurality of said cellular housing structures of said first and second arrays have a rectangular shape.

6. (Currently amended) The structure of claim 5, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array have a shape of at least one of tripod truss, quad pod truss, tetrahedral, cube, hexagon, pyramidal, kagome, ~~cube, hexagon,~~ cluster of solid or hollow spheres, or combinations thereof.

7. (Currently amended) The structure of claim 5, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise open and/or closed cell foams or other porous materials.

8. (Currently amended) The structure of claim 5, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise granular powders or other porous materials.

9. (Currently amended) The structure of claim 5, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise at least one of a) random aggregate of hollow or solid powder particles (with or without interparticle bonding); b) stochastic foam; c) porous or solid materials; d) periodic cellular structures; e) solid powder aggregates; f) lightweight, highly compliant materials such as elastomers; g) low density polymers, metal, ceramic or polymer foams; or h) polymer cast into the cellular housing (or cellular core itself), or combinations thereof.

10. (Previously presented) The structure of claim 4, wherein at least a plurality of said cellular housing structures of said first and second arrays have triangular shape.

11. (Currently amended) The structure of claim 10, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array have a shape of at least one of pyramidal, quad pod, tripod, cluster of solid or hollow spheres, cube, hexagon, tetrahedral, pyramidal, or kagome, or combinations thereof.

12. (Currently amended) The structure of claim 10, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise open and/or closed cell foams or other porous materials.

13. (Currently amended) The structure of claim 10, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise granular powders or other porous materials.

14. (Currently amended) The structure of claim 10, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise at least one of a) random aggregate of hollow or solid powder particles (with or without interparticle bonding); b) stochastic foam; c) porous or solid materials; d) periodic cellular structures; e) solid powder aggregates; f) lightweight, highly compliant materials such as elastomers; g) low density polymers, metal, ceramic or polymer foams; or h) polymer cast into the cellular housing (or cellular core itself), or combinations thereof.

15. (Previously presented) The structure of claim 4, wherein at least a plurality of said cellular housing structures of said first and second arrays have a tubular shape.

16. (Currently amended) The structure of claim 15, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise cluster of solid or hollow spheres, pyramidal, quad pod, tripod, cube, hexagon, tetrahedral, pyramidal, or kagome, or combination thereof.

17. (Currently amended) The structure of claim 15, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise open and/or closed cell foams or other porous materials.

18. (Currently amended) The structure of claim 15, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise granular powders or other porous materials.

19. (Currently amended) The structure of claim 15, wherein at least a plurality of said cellular core structures disposed within a cellular housing structure of either said first or second array comprise at least one of a) random aggregate of hollow or solid powder particles (with or without interparticle bonding); b) stochastic foam; c) porous or solid materials; d) periodic cellular structures; e) solid powder aggregates; f) lightweight, highly compliant materials such as elastomers; g) low density polymers, metal, ceramic

or polymer foams; or h) polymer cast into the cellular housing (or cellular core itself), or combinations thereof.

20. (Previously presented) The structure of claim 4, wherein at least a plurality of said cellular housing structures of said first and second arrays have a hexagonal shape.

21. (Previously presented) The structure of claim 20, wherein at least a plurality of said cellular core structures of said first and second arrays have a shape of at least one of tripod truss, quad pod truss, tetrahedral, cube, hexagon, pyramidal, kagome, cube, hexagon, cluster of solid or hollow spheres, or combinations thereof.

22. (Previously presented) The structure of claim 20, wherein at least a plurality of said cellular core structures of said first and second arrays comprise open and/or closed cell foams or other porous materials.

23. (Previously presented) The structure of claim 20, wherein at least a plurality of said cellular core structures of said first and second arrays comprise granular powders or other porous materials.

24. (Previously presented) The structure of claim 20, wherein at least a plurality of said cellular core structures of said first and second arrays comprise at least one of a) random aggregate of hollow or solid powder particles (with or without interparticle bonding); b) stochastic foam; c) porous or solid materials; d) periodic cellular structures; e) solid powder aggregates; f) lightweight, highly compliant materials such as elastomers; g) low density polymers, metal, ceramic or polymer foams; or h) polymer cast into the cellular housing (or cellular core itself), or combinations thereof.

25. (Original) The structure of claim 4, wherein said second panel is bonded to at least one of said arrays, wherein said bond is at least one of brazing bonded, other transient liquid phase bonded, UV welding bonded, adhesives, resistance welding, laser welding bonded, or diffusion welding bonded.

26. (Original) The structure of claim 4, wherein said structure partially comprises a double ship hull.

27. (Original) The structure of claim 4, wherein said structure comprises a double ship hull.

28. (Previously presented) The structure of claim 4, wherein said structure comprises at least one of:

an architectural structure (for example: pillars, walls, shielding, foundations or floors for tall buildings or pillars, wall shielding floors, for regular buildings and houses),

a civil engineering field structure (for example; road facilities such as noise resistant walls and crash barriers, road paving materials, permanent and portable aircraft landing runways, pipes, segment materials for tunnels, segment materials for underwater tunnels, tube structural materials, main beams of bridges, bridge floors, girders, cross beams of bridges, girder walls, piers, bridge substructures, towers, dikes and dams, guide ways, railroads, ocean structures such as breakwaters and wharf protection for harbor facilities, floating piers/oil excavation or production platforms, airport structures such as runways),

a machine structure (frame structures for carrying system, carrying pallets, frame structure for robots, etc.),

an automobile structure (the body, frame, doors, chassis, roof and floor, side beams, bumpers, etc.),

a ship structure (main frame of the ship, body, deck, partition wall, wall, etc.),

a freight car structure (body, frame, floor, wall, etc.),

aircraft structure (wing, main frame, body, floor, etc.),

spacecraft structure (body, frame, floor, wall, etc.),

space station structure (the main body, floor, wall, etc.), and

submarine structure (the body, frame, etc.).

29. (Original) The structure of claim 3, wherein said first panel is bonded to at least one of said arrays, wherein said bond is at least one of brazing bonded, other transient liquid phase bonded, UV welding bonded, adhesives, resistance welding, laser welding bonded, or diffusion welding bonded.

30. (Original) The structure of claim 3, wherein said structure partially comprises a ship hull.

31. (Original) The structure of claim 3, wherein said structure comprises a ship hull.

32. (Previously presented) The structure of claim 3, wherein said structure comprises at least one of:

an architectural structure (for example: pillars, walls, shielding, foundations or floors for tall buildings or pillars, wall shielding floors, for regular buildings and houses),

a civil engineering field structure (for example; road facilities such as noise resistant walls and crash barriers, road paving materials, permanent and portable aircraft landing runways, pipes, segment materials for tunnels, segment materials for underwater tunnels, tube structural materials, main beams of bridges, bridge floors, girders, cross beams of bridges, girder walls, piers, bridge substructures, towers, dikes and dams, guide ways, railroads, ocean structures such as breakwaters and wharf protection for harbor facilities, floating piers/oil excavation or production platforms, airport structures such as runways),

a machine structure (frame structures for carrying system, carrying pallets, frame structure for robots, etc.),

an automobile structure (the body, frame, doors, chassis, roof and floor, side beams, bumpers, etc.),

a ship structure (main frame of the ship, body, deck, partition wall, wall, etc.),

a freight car structure (body, frame, floor, wall, etc.),

aircraft structure (wing, main frame, body, floor, etc.),

spacecraft structure (body, frame, floor, wall, etc.),

space station structure (the main body, floor, wall, etc.), and

submarine structure (the body, frame, etc.).

33. (Original) The structure of claim 2, wherein a plurality of said arrays are bonded to one another, wherein said bond is at least one of brazing bonded, other transient liquid phase bonded, UV welding bonded, adhesives, resistance welding, laser welding bonded, or diffusion welding bonded.

34. (Previously presented) The structure of claim 1 or 2, wherein at least some of said cellular housing structures of said first and second arrays and at least some of said cellular core structures of said first and second arrays are made from a material selected from the group consisting of polymers, metals, alloys, ceramics, stainless steels, aluminum alloys, and titanium alloys.

35. (Previously presented) The structure of claim 1 or 2, wherein at least some of said cellular housing structures of said first and second arrays and at least some of said cellular core structures of said first and second arrays are made from composites formed of one or more of a material selected from the group consisting of polymers, metals, alloys, ceramics, stainless steels, aluminum alloys and titanium alloys.

36. (Withdrawn – previously presented) A method of constructing a structure comprising:

providing a plurality of cellular housing structures;

disposing at least one cellular core structure in each of a plurality of said cellular housing structures; and

bonding said cellular housing structures together to form at least a first array.

37. (Withdrawn – previously presented) The method of claim 36, further comprising: bonding said cellular housing structures together to form at least a second array.

38. (Withdrawn) The method of claim 36, further comprising:

bonding at least a first panel to said first array.

39. (Withdrawn – previously presented) The method of claim 38, further comprising:

bonding at least a second panel to at least a second array of said cellular housing structures bonded to said first array.